

REMARKS

Claims 35-76 and 104-105 are pending in this Application, with Claims 35 and 68 being independent. In this Amendment, Claims 35, 37-54, 62-68, 72, and 76 were amended, and Claims 1-34, 36, and 77-103 have been cancelled without prejudice to or disclaimer of the subject matter contained therein. All amendments presented herein are made for clarity with respect to the specification and drawings, and not for reasons relating to the statutory requirements for patentability.

Rejection Under 35 U.S.C. 112

Claim 76 was rejected under 35 U.S.C. 112, second paragraph, as allegedly being indefinite. Without conceding the propriety of this grounds for rejection, Applicants submit that in view of the amendments to Claim 76 presented above, this grounds for rejection is moot.

Rejections Under 35 U.S.C. 102/103

Claims 35, 37-38, 40-41, 47-48, 51, 53-54, 63-64, and 67 were rejected under 35 U.S.C. 102(b) as allegedly anticipated by U.S. Patent No. 3,645,696 to Iannacone et al.

Claims 35-36, 40-42, 44-45, 47-49, 52-54, and 62-66 were rejected under 35 U.S.C. 102(b) as allegedly anticipated by U.S. Patent No. 5,332,548 to Moore.

Claim 39 was rejected under 35 U.S.C. 103(a) as allegedly unpatentable over Iannacone et al. or Moore, in view of U.S. Patent No. 3,649,159 to Cohen et al.

Claims 43, 46, and 50 were rejected under 35 U.S.C. 103(a) as allegedly unpatentable over Iannacone et al. or Moore, in view of EP 0 885 914 A2 to Meier et al.

Claims 55-61 were rejected under 35 U.S.C. 103(a) as allegedly unpatentable over Iannacone et al. or Moore in view of U.S. Patent No. 3,932,126 to Jilla.

Claims 68-71, 74, and 76-77 were rejected under 35 U.S.C. 103(a) as allegedly unpatentable over Moore in view of U.S. Patent No. 4,622,207 to Wang.

Claims 72-73 were rejected under 35 U.S.C. 103(a) as allegedly unpatentable over Moore in view of Wang, and further in view of Iannacone et al.

Claim 75 was rejected under 35 U.S.C. 103(a) as allegedly unpatentable over Moore in view of Wang, and further in view of U.S. Patent No. 4,946,705 to Manning et al.

Applicants respectfully traverse all art rejections.

Applicants' Claimed Invention

The presently claimed invention relates to a method of making an indicator for testing acetaldehyde emitted into the air by a polymer. The method includes the steps of contacting a solution of 3-methyl-2-benzothiazolinone hydrazone hydrochloride (MBTH) reagent with a carrier, drying the MBTH reagent in an atmosphere that is non-reactive with the reagent to form an acetaldehyde-reactive reagent coated carrier, applying said reagent coated carrier to a support; and providing a developing solution for use in quantifying the amount of acetaldehyde reacted with said reagent coated carrier.

The Applied Art

Iannacone et al. discloses a reactive powder, such as MBTH coated anhydrous aluminum, for testing for the presence of ethylene glycol in crankcase oil. The crankcase oil is reacted with an oxidizer, and an aqueous phase containing any formaldehyde produced by oxidation of ethylene glycol is separated from the oil. The MBTH coated anhydrous aluminum causes a color change of the aqueous solution if formaldehyde is present in the aqueous solution, thereby indicating that the crankcase oil is contaminated with ethylene glycol. Iannacone et al. fails to disclose using the MBTH coated anhydrous aluminum carrier on an inert support, or providing a developing solution for quantifying the reaction.

Moore discloses an aldehyde test strip having a reagent provided on an alumina carrier, and optionally applied to a support. However, use of MBTH as a reagent is not disclosed, and Moore teaches away from Applicants' claimed invention, in which a developing solution is provided for quantifying the amount of acetaldehyde reacted with the reagent coated carrier. Instead, Moore requires that no "exogenous reagent or substance" be used to prepare for or conduct the analysis. (See col. 4, lines 56-68.)

Wang primarily discloses a method of creating "independent reagent matrix zones" in a hydrophobic open-celled natural or synthetic material to avoid runoff. (See Abstract.) Wang also discloses use of a matrix material affixed to an insoluble support member by double-sided tape. Wang does not disclose preparing an acetaldehyde-reactive reagent coated carrier, bonding an adhesive tape covered with a thin layer of an acetaldehyde-reactive reagent coated carrier to a support, or providing a developing solution for quantifying the reaction of the reagent with acetaldehyde.

Even taken in combination, and Applicants do not concede that these patents may be properly combined, Iannacone et al., Moore, and Wang fail to disclose or suggest a method of making an indicator for testing acetaldehyde emitted by a polymer into the air as set forth in independent Claims 35 and 68. They also fail to disclose or suggest an MBTH coated carrier applied to a support, and they fail to disclose or suggest providing a developing solution for quantifying the amount of acetaldehyde reacted with the MBTH coated carrier. For these reasons, Applicants submit that independent Claims 35 and 68 are patentable over the cited patents, and that the dependent Claims are also patentable for the same reasons.

Applicants submit that none of the other cited patents, Cohen et al., Meier et al., Jilla, and Manning et al., which were cited with respect to various dependent claims, remedies the above-noted deficiencies of Iannacone et al., Moore, and/or Wang, as discussed above. Accordingly, Applicants submit that this application is in condition for allowance.

In addition, Applicants submit in an Information Disclosure Statement being filed herewith an additional patent and article for consideration. Those documents also fail to remedy the deficiencies of the cited patents for the reasons set forth below.

The procedure of Attar (U.S. Patent No. 4,666,859) specifically relates to formaldehyde detection using rubeanic acid or a rubeanic acid derivative and a cyano complex of a metal. Examples include the use of a reagent coated alumina carrier. Although MBTH was mentioned as a "very sensitive reagent for ketones and aldehydes," there is no disclosure of any procedure for preparing an MBTH coated alumina carrier for use in detecting aldehyde. Attar also does not disclose detecting aldehyde emitted in air by a polymer, or providing a developing solution for quantifying the amount of acetaldehyde reacted with the MBTH coated carrier.

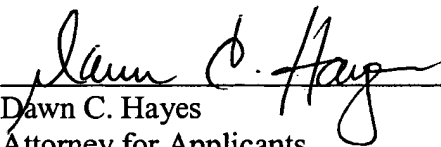
The article by Chan et al. (2001) also fails to remedy the deficiencies of the cited art. It differs from the presently claimed invention at least in that it uses a glass fiber filter as a reagent carrier for the MBTH (silica gel is also mentioned as a carrier in the introduction), which is not applied to a support. The method of Chan et al. is used to measure formaldehyde present generally in the environment, not to measure the amount of acetaldehyde emitted by a polymer into the air. Chan et al. does disclose use of an iron (III) chloride-sulfamic acid mixture as a developing solution. However, Applicants submit that this disclosure of a developing solution may not be properly combined with the patents already of record due to the significant differences in the methods, and due to the specific teaching in Moore that no exogenous reagents or substances be used in connection with its testing method.

Conclusion

Applicants submit that, in view of the amendments and arguments set forth above, this application is in condition for allowance, and respectfully request prompt issuance of a notice thereof.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 625-3500. All correspondence should continue to be directed to our address given below.

Respectfully submitted,


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